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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,423	10/12/2005	Keietsu Abe	4600-0112PUS1	1788

2292 7590 07/09/2007
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EXAMINER	
RAGHU, GANAPATHIRAM	
ART UNIT	PAPER NUMBER
1652	

NOTIFICATION DATE	DELIVERY MODE
07/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/532,423	ABE ET AL.	
	Examiner	Art Unit	
	Ganapathirama Raghu	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *53-70* is/are pending in the application.

4a) Of the above claim(s) *58,59,63 and 64* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *53-57,60-62 and 65-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/12/2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/22/05; 01/05/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *SEQ ALIGN*.

DETAILED ACTION

Applicants' election with traverse of SEQ ID NO: 1 for the gene encoding the hydrophobin/biosurfactant *Aspergillus oryzae* (Rol1A) and the gene encoding cutinase of *Aspergillus oryzae* (CutL1) and *Aspergillus* as species for prosecution in their response dated 05/18/2007 is acknowledged. Applicants' traversal is based on the argument that unity of invention exists in the subject matter of present claims and would not be a serious search burden to examine all polynucleotides and encoding polypeptides. Applicants' arguments have been considered, however the examiner respectfully disagrees for the following reasons. The claims as written encompass any substitution, deletion and /or insertion of one or more amino acids to SEQ ID NOs: 1-7 and their encoding polynucleotides, thus claims are directed to unspecified genus of polynucleotides and encoding polypeptides that are structurally distinct molecules, therefore, search would not be coextensive and involves search of different databases and non-patent literature. In addition, claims also encompass polynucleotides that do not encode the elected polypeptide, but distinctly different molecule such as a gene encoding a "useful substance" or an amylase, hence the search of all the polynucleotides are not coextensive and burdensome. Therefore, for the above cited reasons searching of structurally distinct polynucleotides as claimed is a serious search burden. As stated on record in the Office communication of letter dated 04/18/07 (requirement for restriction), examiner would like to bring to applicants' attention the recent notice and policy of the Office regarding examination of more than one sequence. Hence, contrary to applicants' argument, the requirement is still deemed proper and is therefore made FINAL.

Claims 53-70 are pending in this application, claims 58, 59, 63 and 64 are withdrawn as

they are directed to non-elected sequences. Claims 53-57, 60-62 and 65-70 are now under consideration for examination.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). This application is a 371of PCT/JB03/11861 filed on 09/17/2003 and claims the priority date of Japanese applications 2002-308884 and 2002-371246 filed respectively on 10/23/2002 and 12/24/2002. Examiner notes that the certified copies of English translation of said Japanese applications have not been provided.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 04/22/2005 and 01/05/2006 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the IDS statement.

Objection to Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show Figures 3-7, 10, 12-17 and 19 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

New claims 55 and 56 are objected to, due to the following informality: New claims 55 and 56 contain non-elected subject matter/SEQ ID NOs: 2 and 3, appropriate correction is required.

New claims 55 and 56 are objected to, due to the following informality: Claims 55 and 56 recite the phrase "base sequence" in the claims. Examiner suggests changing the phrase to "nucleotide sequence", appropriate correction is required.

New claim 68 is objected to, due to the following informality: Claim 68 has a spelling error "*Trichodera*" should read as "*Trichoderma*", appropriate correction is required.

Claim Rejections: 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 54, 57, 66 and claims 55, 56 depending therefrom are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 54, 57, 66 recite the phrase "...derived from *Aspergillus oryzae*". It is not clear to the examiner as to what the phrase "...derived from *Aspergillus oryzae*" means in the context of the above claims, is this synonymous with "obtained from a specific strain of *Aspergillus oryzae*" or does it include mutants thereof. Clarification is required.

Claims 55 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 55 and 56 recite the phrase "homologue", as the metes and bounds of the said phrase is not clear to the examiner. There is no clear definition in the specification for a "homologue", regarding structural or functional homology to members of the hydrophobin family.

Claims 55 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 55 and 56 are rejected for the phrase "substantially same... SEQ ID NO: 1", as the metes and bounds are not clear. The scope of the term "substantially same... SEQ ID NO: 1" is not clear to the examiner, does it include any variant or fragments of SEQ ID NO: 1 for the gene encoding the hydrophobin *Aspergillus oryzae* (Rol1A) with any structure or any function or no function? Clarification and correction is required.

Claims 55 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 55 and 56 are rejected for the phrase "substantially the same function as the hydrophobin", as the metes and bounds are not clear. The scope of the term "substantially the same function as the hydrophobin" is not clear to the examiner; as compared to which hydrophobin activity and the metrics for the extent of the activity? clarification and correction is required.

Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 56 is indefinite in the recitation of stringent conditions , as the specification does not define what conditions constitute "stringent". While page 17 of the specification indicates some conditions which are intended to be stringent, the conditions are merely exemplary and in the art what is considered stringent varies widely depending on the individual situation as well as the person making the determination. As such it is unclear how homologous to the sequence of a gene encoding SEQ ID NO: 1 a sequence must be to be included within the scope of these claims.

Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 56 recites the phrase "a base sequence complementary to the DNA", it is

not clear to the examiner whether the complementary polynucleotide claimed is full length or partial complement of the claimed sequence.

Claim 65 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 65 is rejected for the phrase "useful substance", as the metes and bounds are not clear. The scope of the term "useful substance" is not clear to the examiner and what exactly the term "useful substance" encompass? Clarification and correction is required.

Claim Rejections: 35 USC § 112-First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Enablement

Claims 53-57, 60-62 and 65-70 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a transformant comprising the DNA sequence of SEQ ID NO: 1 and encoding a polypeptide having biosurfactant/hydrophobin activity and/or a gene encoding cutinase of *Aspergillus oryzae* (CutL1), said gene spanning the coding region generated by PCR using the oligonucleotide primers of SEQ ID NOs: 12 and 13 and having plastic degrading activity (section 3-3, page 36 of specification). However the specification does not reasonably provide enablement for any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants

(as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with the claim.

Factors to be considered in determining whether undue experimentation is required are summarized in *In re Wands* (858 F.2d 731, 8 USPQ 2nd 1400 (Fed. Cir. 1988)) as follows: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claim(s).

Claims 53-57, 60-62 and 65-70 are so broad as to encompass any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants (as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66). The scope of the claims are not commensurate with the

enablement provided by the disclosure with regard to a transformant comprising the extremely large number of polynucleotides and encoding polypeptides having biosurfactant/hydrophobin activity or plastic degrading activity or any useful substance with any activity or any polypeptide with amylase activity, broadly encompassed by the claims. Since the amino acid sequence of a protein encoded by a polynucleotide determines its structural and functional properties, predictability of which changes can be tolerated in a protein's amino acid sequence and obtain the desired activity requires knowledge and guidance with regard to which amino acids in the protein's sequence and the respective codons in its polynucleotide, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification), and detailed knowledge of the ways in which the encoded proteins' structure relates to its function. In this case the disclosure is limited to a transformant comprising the DNA sequence of SEQ ID NO: 1 and encoding polypeptide having biosurfactant/hydrophobin activity and/or a gene encoding cutinase of *Aspergillus oryzae* (CutL1), said gene spanning the coding region generated by PCR using the oligonucleotide primers of SEQ ID NOs: 12 and 13 having plastic degrading activity (section 3-3, page 36 of specification). In view of the great breadth of the claims, the amount of experimentation required to determine a use for the full scope of the claimed a transformant comprising the extremely large number of polynucleotides and encoding polypeptides having biosurfactant/hydrophobin activity or plastic degrading activity or any useful substance with any activity or any polypeptide with amylase activity, the lack of guidance, working examples, and unpredictability of the art in predicting function from a polypeptide primary structure (e.g., see Whisstock et al., Q Rev Biophys. 2003 Aug; 36(3): 307-340), the claimed invention would

require undue experimentation. As such, the specification fails to teach one of ordinary skill how to use the full scope of the polypeptides encompassed by these claims.

While enzyme isolation techniques, recombinant and mutagenesis techniques are known, and it is not routine in the art to screen for multiple substitutions or multiple modifications as encompassed by the instant claims, the specific amino acid positions within a protein's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining the desired activity/utility are limited in any protein and the result of such modifications is unpredictable (e.g., see Whisstock et al., Q Rev Biophys. 2003 Aug; 36(3): 307-340). In addition, one skilled in the art would expect any tolerance to modification for a given protein to diminish with each further and additional modification, e.g. multiple substitutions or deletions.

The specification does not support the broad scope of the claims which encompasses any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants (as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66). The specification does not enable the full scope of claims 53-57, 60-62 and 65-70, because the specification does not establish: (A) any polynucleotide and encoding polypeptide having biosurfactant/hydrophobin activity and or any gene encoding an

enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants or a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants, the structure of all polynucleotide and encoding polypeptide with desired activity including variants, mutants and recombinants; (B) regions of the protein/polynucleotide structure which may be modified without affecting the activity of encoded polypeptide or the activities of said polypeptides; (C) the general tolerance of the polynucleotide and the encoding polypeptide to modification and extent of such tolerance; (D) a rational and predictable scheme for modifying any amino acid residue or the respective codon in the polynucleotide with an expectation of obtaining the desired biological function; and (E) the specification provides insufficient guidance as to which of the essentially infinite possible choices is likely to be successful.

Thus, applicants have not provided sufficient guidance to enable one of ordinary skill in the art to use the claimed invention in a manner reasonably correlated with the scope of the claims broadly including polynucleotides and encoding polypeptides with an enormous number of modifications and said polynucleotides transfected into any transformant. The scope of the claim must bear a reasonable correlation with the scope of enablement (*In re Fisher*, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants or DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin or said transformant further comprising a DNA

encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants, is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See *In re Wands* 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Written Description

Claims 53-57, 60-62 and 65-70 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 53-57, 60-62 and 65-70, as interpreted, are directed to any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants (as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66).

In *University of California v. Eli Lilly & Co.*, 43 USPQ2d 1938, the Court of Appeals for the Federal Circuit has held that "A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by

structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials". As indicated in MPEP § 2163, the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show that Applicant was in possession of the claimed genus. In addition, MPEP § 2163 states that a representative number of species means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus.

In the instant case, there is no structure correlated to associated function recited in claims with regard to the members of the genus of polynucleotides and encoding polypeptides i.e., any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants (as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66), as claimed in claims 53-57, 60-62 and 65-70. While the specification in the instant application discloses the structures, i.e., a transformant comprising the

DNA sequence of SEQ ID NO: 1 and encoding a polypeptide having biosurfactant/hydrophobin activity and/or a gene encoding cutinase of *Aspergillus oryzae* (CutL1), said gene spanning the coding region generated by PCR using the oligonucleotide primers of SEQ ID NOs: 12 and 13 and having plastic degrading activity (section 3-3, page 36 of specification), it fails to provide any information as to the structure associated with function for the genus of polynucleotides and encoding polypeptides claimed i.e., members of enzymatically active polypeptides in any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants, mutants and recombinants (as in claims 53, 54, 57, 60-62 and 67-70) or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin (as in claims 55 and 56) or said transformant further comprising a DNA encoding any useful substance or any gene encoding an amylase including variants, mutants and recombinants (as in claims 65 and 66) by any relevant, identifying characteristics or properties, one of skill in the art would not recognize from the disclosure that Applicant was in possession of the claimed invention.

Applicant is referred to the revised guidelines concerning compliance with the written description requirement of U.S.C. 112, first paragraph, published in the Official Gazette and also available at www.uspto.gov.

Claim Rejections 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 53, 68 and 69 are rejected under 35 U.S.C. 102(b) as being anticipated by Stringer et al., (1991). Claims 53, 68 and 69 are drawn to a transformant comprising a gene encoding a biosurfactant/hydrophobin, said transformant is fungal host cell belonging to *Aspergillus*. Stringer et al., disclose an isolated polynucleotide having 75.3% sequence homology to SEQ ID NO: 1 and encoding a polypeptide which contributes to surface hydrophobicity and said reference also discloses a transformant, fungal host cell belonging to *Aspergillus* comprising said polynucleotide. Therefore, Stringer et al., anticipate claims 53, 68 and 69 as written (see copy of the sequence alignments provided).

Claims 53 and 68 are rejected under 35 U.S.C. 102(b) as being anticipated by Askolin et al., (2001). Claims 53 and 68 are drawn to a transformant comprising a gene encoding a biosurfactant/hydrophobin, said transformant is fungal host cell selected from the group consisting of *Aspergillus, Trichoderma*. Askolin et al., disclose a transformant, fungal host cell belonging to *Trichoderma* comprising a polynucleotide encoding a polypeptide having hydrophobin activity. Therefore, Askolin et al., anticipate claims 53 and 68 as written.

Claims 53, 60-62 and 67-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuchiya et al., (1996). Claims 53, 60-62 and 67-70 are drawn to any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* including variants,

mutants and recombinants. Tsuchiya et al., disclose cloning and nucleotide sequence of extracellular lipolytic enzymes a cutinase of *Aspergillus oryzae* (CutL1) and a transformant, comprising said polynucleotide encoding a polypeptide having plastic degrading activity. Therefore, Tsuchiya et al., anticipate claims 53, 60-62 and 67-70 as written.

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 53-57 and 67-70 are rejected under 35 U.S.C. 102 (e) as being anticipated by Berka et al., (US Patent 6,902,887 B1, claiming priority to US application 09/533,559 filed on 03/22/2000). Claims 53-57 and 67-70 are drawn to any transformant comprising a DNA encoding any polypeptide having biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with plastic degrading activity from *Aspergillus oryzae* or a DNA encoding a polypeptide wherein said polypeptide comprises any amino acid replaced, deleted or added to SEQ ID NO: 1 or its partial sequence and having substantially the same function as hydrophobin and to a complementary DNA sequence able to hybridize to SEQ ID NO: 1 under undefined stringent conditions. Berka et al., disclose an isolated polynucleotide sequence (EST SEQ ID NO: 4744) from *Aspergillus oryzae*, which has 99.7% homology to the DNA of the encoded polypeptide sequence SEQ ID NO: 1. The reference is silent regarding the activity of the polypeptide to be a hydrophobin, however examiner takes the position that the polynucleotide by virtue of its sequence homology (99.7%), inherently encodes a polypeptide with hydrophobin activity. Said polynucleotide will hybridize to SEQ ID NO: 1 under said stringent conditions of

the specification. The reference also discloses vectors and host cells comprising said polynucleotides (column 8, Examples 4-7). Therefore, Berka et al., anticipate claims 53-57 and 67-70 as written (see copy of the sequence alignment provided).

Allowable Subject Matter/Conclusion

None of the claims are allowable.

Final Comments

To insure that each document is properly filed in the electronic file wrapper, it is requested that each of amendments to the specification, amendments to the claims, Applicants' remarks, requests for extension of time, and any other distinct papers be submitted on separate pages.

It is also requested that Applicants identify support, within the original application, for any amendments to the claims and specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ganapathirama Raghu whose telephone number is 571-272-4533. The examiner can normally be reached on M-F; 8:00-4:30 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular communications and for After Final communications. Any inquiry of a general nature or relating to the status of the application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ganapathirama Raghu, Ph.D.
Patent Examiner
Art Unit 1652
June 26, 2007.

REBECCA E. PROUTY
PRIMARY EXAMINER
GROUP 1600

10/532,423 (Abe et al)
102 (b) for broad claims
homologues

<!--StartFragment-->RESULT 2
RODL_EMENI
ID   RODL_EMENI   STANDARD;   PRT;   157 AA.
AC   P28346;
DT   01-DEC-1992, integrated into UniProtKB/Swiss-Prot.
DT   01-DEC-1992, sequence version 1.
DT   07-FEB-2006, entry version 30.
DE   Rodlet protein precursor.
GN   Name=rodA;
OS   Emericella nidulans (Aspergillus nidulans).
OC   Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
OC   Eurotiales; Trichocomaceae; Emericella.
OX   NCBI_TaxID=162425;
RN   [1]
RP   NUCLEOTIDE SEQUENCE [GENOMIC DNA].
RX   MEDLINE=91293577; PubMed=2065971;
RA   Stringer M.A., Dean R.A., Sewall T.C., Timberlake W.E.;
RT   "Rodletless, a new Aspergillus developmental mutant induced by
RT   directed gene inactivation.";
RL   Genes Dev. 5:1161-1171(1991).
CC   -!- FUNCTION: Contributes to surface hydrophobicity, which is
CC   important for processes such as association of hyphae in
CC   reproductive structures, dispersal of aerial spores and adhesion
CC   of pathogens to host structures. Important for the formation of
CC   hydrophobic rodlet layers of asexually-produced spores.
CC   -!- SUBCELLULAR LOCATION: Secreted protein.
CC   -!- DEVELOPMENTAL STAGE: Accumulates at about the time sterigmata
CC   appear and remains at high levels throughout the final stages of
CC   conidiophore formation and during spore differentiation and
CC   maturation.
CC   -!- INDUCTION: By brlA.
CC   -!- SIMILARITY: Belongs to the fungal hydrophobin family.
CC   ---
CC   Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
CC   Distributed under the Creative Commons Attribution-NoDerivs License
CC   ---
DR   EMBL; M61113; AAA33321.1; -; Genomic_DNA.
DR   PIR; A40323; A40323.
DR   InterPro; IPR001338; Hydrophobin.
DR   Pfam; PF01185; Hydrophobin; 1.
DR   SMART; SM00075; HYDRO; 1.
DR   PROSITE; PS00956; HYDROPHOBIN; 1.
KW   Cell wall; Glycoprotein; Signal.
FT   SIGNAL   1   41   Potential.
FT   CHAIN   42   157   Rodlet protein.
FT   /FTId=PRO_0000013508.
FT   CARBOHYD   47   47   N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   157 AA; 15643 MW; 69F08B2C7ED28277 CRC64;

Alignment Scores:

Pred. No.:	3.94e-26	Length:	157
Score:	462.00	Matches:	90
Percent Similarity:	75.3%	Conservative:	29
Best Local Similarity:	57.0%	Mismatches:	31
Query Match:	49.6%	Indels:	8
DB:	1	Gaps:	4

US-10-532-423-1 (1-497) x RODL_EMENI (1-157)

```
Qy          1 ATGCAGTTCTCCGTC---GCCGCTGTTCTTGCTCTGGCTACTGCCGTTGCCGCTCTTCCT 57
              |||:::|||||||:::   ||||||||||:::|||   |||   :::|||||||||||||||
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```
Db          1 MetLysPheSerIleAlaAlaAlaValValAlaPheAlaAlaSerValAlaAlaLeuPro 20

Qy         58 CCTGCC---------------TCTGGCACTGGCGCTGGCCAGCAAGTCGGACACTCCAAG 102
              ||||||               :::|||   |||   |||   :::   |||:::|||
Db         21 ProAlaHisAspSerGlnPheAlaGlyAsnGlyValGlyAsnLys---GlyAsnSerAsn 39

Qy        103 AACGACTTCCCTCTCCCTAAGGAGTTGACCACCAAGCAGGCCGCCGACAAGTGTGGTGAC 162
                    ||||||:::|||:::   :::|||   ||||||||||:::|||||||||||||||
Db         40 ValLysPheProValProGluAsnValThrValLysGlnAlaSerAspLysCysGlyAsp 59

Qy        163 CAGGCTCAGCTCACCTGCTGCAACAAGACCGTCAAGACCGGTGACTTCACCCAGGTTGAG 222
              ||||||||||||:::|||||||||||||            ||||||   |||   |||:::
Db         60 GlnAlaGlnLeuSerCysCysAsnLysAlaThrTyrAlaGlyAspThrThrThrValAsp 79

Qy        223 GAGGGTCTCCTTGCTGGCCTCCTCTCCAACCTCCTCGGTGCCGGACAGGGCTCCCAGGGT 282
              ||||||||||||:::|||   ||||||   |||:::|||||||||   |||::::::|||
Db         80 GluGlyLeuLeuSerGlyAlaLeuSerGlyLeuIleGlyAlaGlySerGlyAlaGluGly 99

Qy        283 CTTGGTCTCTTGGATGAGTGCACCAACATCCCTGTTATCCCCATCATCTCCATCGCCTCT 342
              |||||||||   |||:::|||:::   :::   |||      :::|||   |||
Db        100 LeuGlyLeuPheAspGlnCysSerLysLeuAspValAlaValLeuIleGlyIleGlnAsp 119

Qy        343 ---CCTCAGGAGAAGTGCAAGCAGCCCATCTCTTGCTGCCAGAACACCAAGTCCAGCGCC 399
                    :::||||||||||||   |||:::|||||||||||||:::   |||||||||
Db        120 LeuValAsnGlnLysCysLysGlnAsnIleAlaCysCysGlnAsnSerProSerSerAla 139

Qy        400 GATGGCGACCTCGTCGGTATTGGTCTTCCTTGCATCGCTCTCGGCTCTCTCCTG 453
              ||||||:::|||:::|||:::||||||||||||:::||||||||||||:::|||
Db        140 AspGlyAsnLeuIleGlyValGlyLeuProCysValAlaLeuGlySerIleLeu 157
<!--EndFragment-->
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